

Rec'd CRA

APR 28 2005



**TESTING SERVICE CORPORATION**

*Local Offices:*

457 E. Gundersen Drive, Carol Stream, IL 60188-2492  
630.653.3920 • Fax 630.653.2726

209 Cleveland Street, Suite C, Cary, IL 60013-2978  
847.516.0505 • Fax 847.516.0527

401 N. Riverside Drive, Suite 24, Gurnee, IL 60031-5914  
847.249.6040 • Fax 847.249.6042

203 Earl Road, Suite A, Shorewood, IL 60431-9446  
815.744.1510 • Fax 815.744.1728

8201 W. 183<sup>RD</sup> Street, Suite C, Tinley Park, IL 60477-9249  
708.429.2080 • Fax 708.429.2144

Gurnee, Illinois

April 25, 2005

Mr. Tim Leo  
Conestoga-Rovers & Associates, Inc.  
8615 West Bryn Mawr Avenue  
Chicago, Illinois 60631

Re: L-62,873-2160  
Report 1  
Coke Project  
Waukegan, Illinois  
PO 10-000627

Dear Mr. Leo:

The following services have been provided in connection with the referenced project.

March	3, 2005	E. Huffman	Technician Services	4.00 hours
April	1, 2005	L. Miller	Technician Services	4.00 hours*
April	6, 2005	S. Shah	Technician Services	4.00 hours*
April	18, 200	V. Hovakimian	Report Preparation	1.00 hour

\*Use of Nuclear Density Equipment  
(3) Laboratory Compaction Curves

**Compaction Control**

In-place density tests were performed on Crushed Limestone (CA-6) that was placed for the parking lot for the depths and locations shown on Percent Compaction Report.

Based on the ASTM D 1557 (Modified) laboratory procedure, the percent compaction values met the specification requirement of 95 percent. The percent compaction data are included with this correspondence.

Also, included with this correspondence are copies of the laboratory compaction curves for the following materials.

Conestoga-Rovers & Associates, Inc.  
L - 62,873-2160 - April 25, 2005

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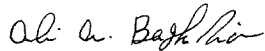
Soil Description	ASTM Procedure	Maximum Dry Density(PCF)	Optimum Water Content(%)
Crushed Limestone	D 1557	140.9	5.8
Brown SAND & GRAVEL	D 1557	134.6	7.3
Brown fine SAND	D 1557	120.2	6.7

Please call if there are any questions.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,



Ali A. Bagherian, P.E.  
Gurnee Branch Manager



Vahan Hovakimian, E.I.

AAB:VH:km

Enc. 4 Pages



# PERCENT COMPACTION REPORT

## TESTING SERVICE CORPORATION

457 E. GUNDERSEN DRIVE • CAROL STREAM, IL 60188-2492 • 630.653.3920 • FAX 630.653.2726  
Conestoga-Rovers & Associates, Inc.

CLIENT:

8615 West Bryn Mawr avenue  
Chicago, Illinois 60631

PROJECT:

COKE PROJECT  
WAUKEGAN, ILLINOIS

DATE TESTED

April 1 & 6, 2005

JOB NUMBER

L - 62,873

PAGE NUMBER

1 of 1

### FIELD DATA

TEST NO.	LOCATION	DEPTH/ ELEVATION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	LCC	COMPACTION			
						TEST (%)	SPECIFICATION (%)	PASS	FAIL
	<u>April 1, 2005</u>								
1	54'W of NEC of Parking Lot	1.5	138.5	7.7	A	98.3	95.0	X	
2	20'E of SWC	1.5	130.3	7.0	A	92.5	95.0	R	
3	60'SE of NWC	1.5	134.6	6.6	A	95.5	95.0	X	
4	Retest of Test 2	1.5	139.8	7.3	A	99.2	95.0	X	
5	Center of Parking Lot, N Side	1.5	135.7	6.5	A	96.3	95.0	X	
6	SEC of Parking Lot	1.5	133.0	6.6	A	94.4	95.0		X
7	Retest of Test 6	1.5	135.4	6.8	A	96.1	95.0	X	
	<u>April 6, 2005</u>								
	Parking Lot:								
1	15'W of E End x 50'S of N End	1.5	135.0	4.4	A	95.8	95.0	X	
2	15'N of S Corner x 3'W of Parking Lot	2.5	133.8	5.1	A	95.0	95.0	X	
3	20'N of S Corner x 25'W of E Corner	1.0	136.0	5.7	A	96.5	95.0	X	
4	10'S of N Corner x 20'E of W Corner	0.0	136.7	5.7	A	97.0	95.0	X	

DEPTH/ELEVATION = DEPTH IN FEET BELOW FOOTING OR FINAL SUBGRADE OR EXPRESSED AS ELEVATION

### COMMENTS

R = Recommended for acceptance.

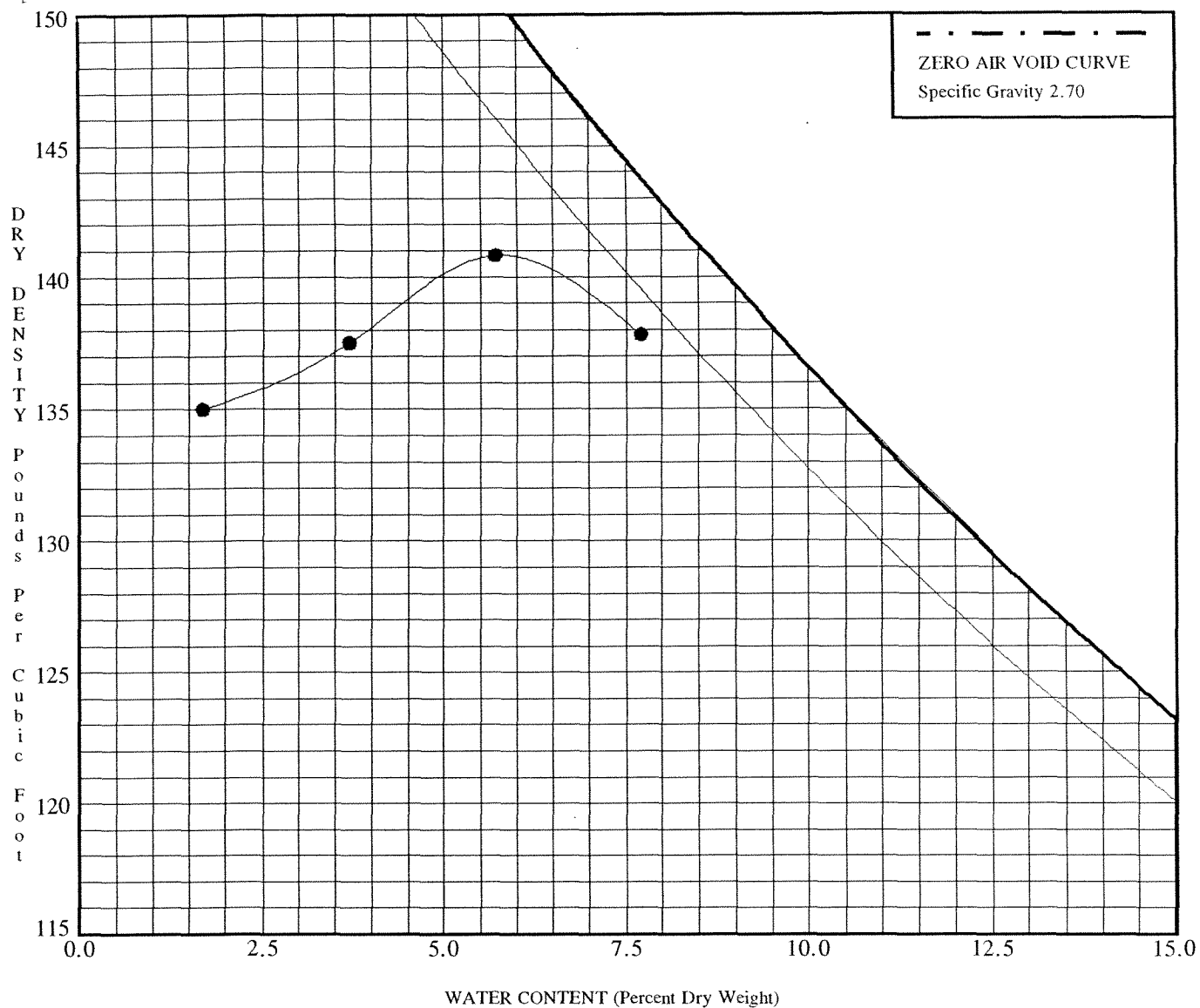
### LABORATORY COMPACTION CURVES

LCC	SOIL / MATERIAL DESCRIPTION	DRY UNIT WEIGHT (PCF)	MOISTURE CONTENT (%)	PROCEDURE
A	Crushed LIMESTONE, CA-6	140.9	5.8	ASTM 1557

FIELD TEST PROCEDURE	MANUFACTURER / MODEL NUMBER	SERIAL NUMBER	MODE
Nuclear Gauge	Humboldt 5001 Troxler 3401-B	342 5203	8" Direct Transmission

FIELD TECHNICIAN
L. Miller/S. Shah

REVIEWED BY
V. Hovakimian

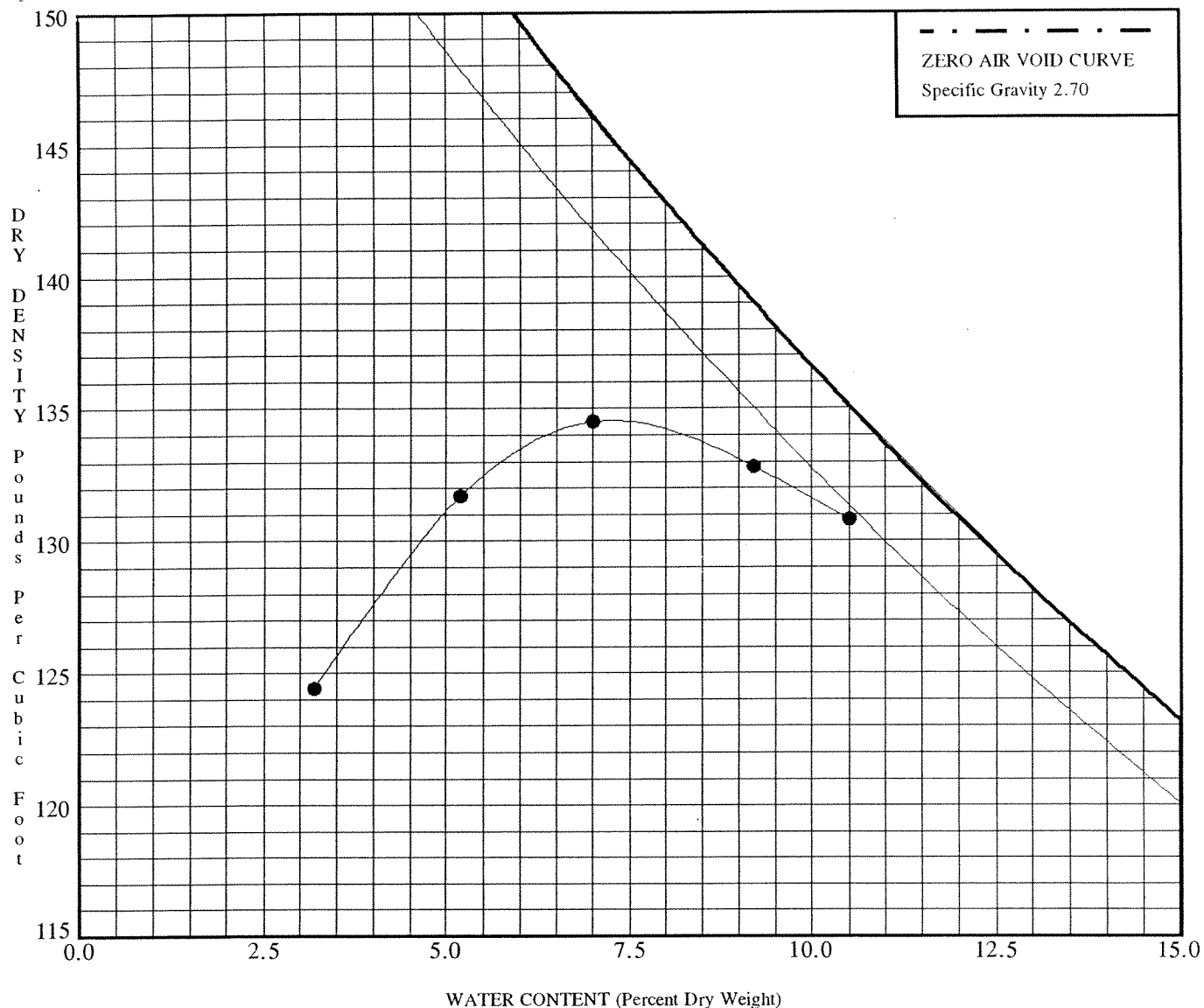


SPECIMEN IDENTIFICATION		CLASSIFICATION	
		Crushed Limestone (CA-6)	
MOISTURE/DENSITY RELATIONSHIP		NOTES :	
Standard	ASTM D698/AASHTO T99	Date Completed: 3/8/05	
<b>X</b>	Modified ASTM D1557/AASHTO T180		
Maximum Dry Density (PCF) <b>140.9</b>			
Optimum Water Content (%) <b>5.8</b>			

PROJECT	Coke Project	JOB NO.	L-62,873-2160
LOCATION	Waukegan, Illinois	DATE	

### MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation  
CAROL STREAM



### SPECIMEN IDENTIFICATION

### CLASSIFICATION

Brown SAND & GRAVEL

### MOISTURE/DENSITY RELATIONSHIP

Standard ASTM D698/AASHTO T99

☒ Modified ASTM D1557/AASHTO T180

Maximum Dry Density (PCF) **134.6**

Optimum Water Content (%) **7.3**

### NOTES :

Date Completed: 3/21/05

PROJECT Coke Project

JOB NO. L-62,873-2160

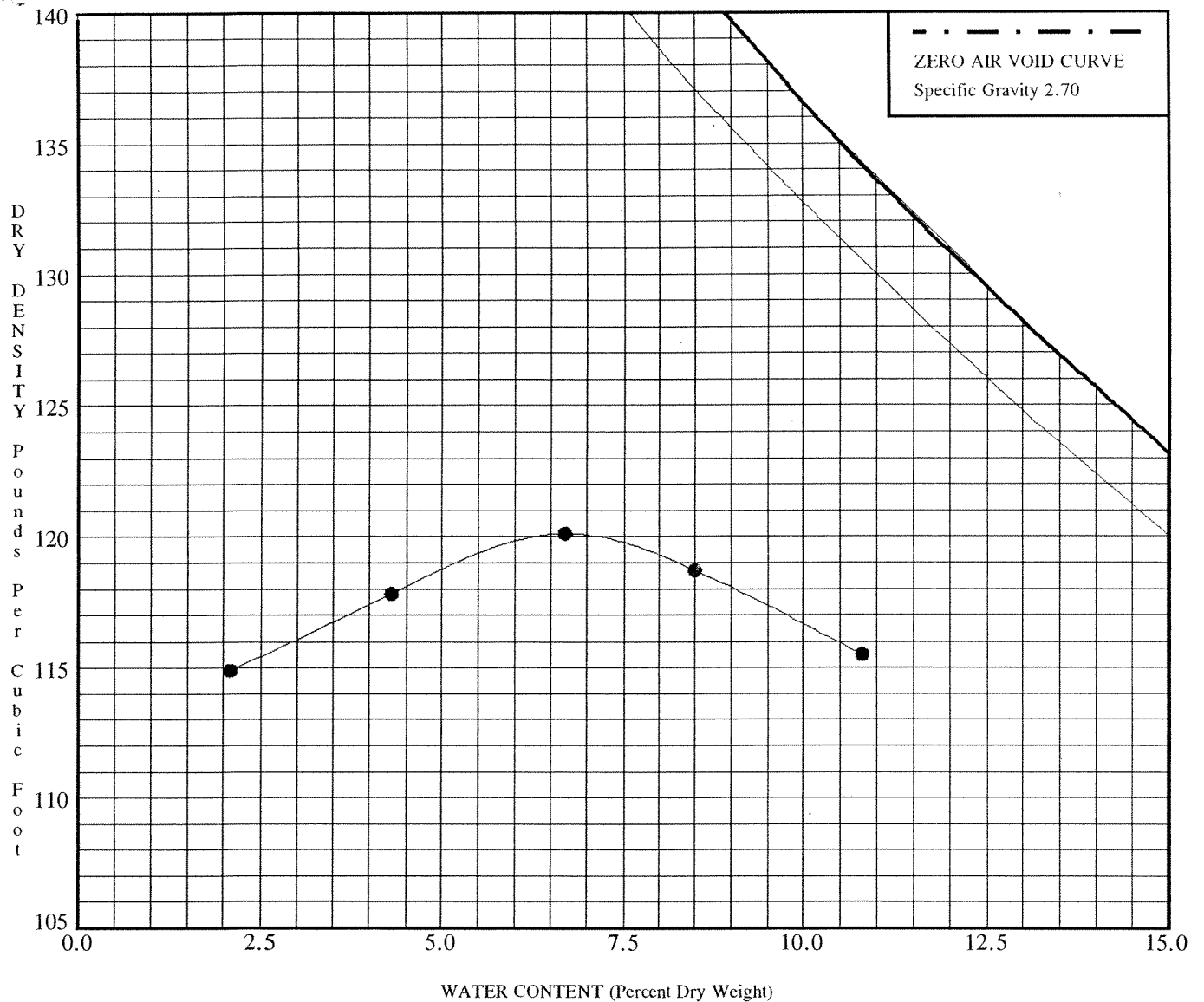
LOCATION Waukegan, Illinois

DATE

## MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation

CAROL STREAM



<b>SPECIMEN IDENTIFICATION</b>		<b>CLASSIFICATION</b>	
		Brown fine SAND	
<b>MOISTURE/DENSITY RELATIONSHIP</b>		<b>NOTES :</b>	
Standard	ASTM D698/AASHTO T99	Date Completed: 3/9/05	
<b>X</b>	Modified ASTM D1557/AASHTO T180		
Maximum Dry Density (PCF) <b>120.2</b>			
Optimum Water Content (%) <b>6.7</b>			

<b>PROJECT</b>	Coke Project	<b>JOB NO.</b>	L-62,873-2160
<b>LOCATION</b>	Waukegan, Illinois	<b>DATE</b>	

## MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation  
CAROL STREAM

Gurnee, Illinois

June 6, 2005

Mr. Tim Leo  
Conestoga-Rovers & Associates, Inc.  
8615 West Bryn Mawr Avenue  
Chicago, Illinois 60631

Re: L-62,873-2160  
Report 2  
Coke Project  
Waukegan, Illinois  
PO 10-000627

Dear Mr. Leo:

The following services have been provided in connection with the referenced project.

April	27, 2005	J. Turner	Technician Services	4.00 hours*
May	4, 2005	J. Turner	Technician Services	8.00 hours*
May	16, 2005	J. Turner	Work Canceled	4.00 hours
May	17, 2005	J. Turner	Technician Services	4.00 hours*
May	19, 2005	J. Turner	Technician Services	4.00 hours
May	27, 2005	V. Hovakimian	Report Preparation	1.00 hour

\*Use of Nuclear Density Equipment  
(2) Laboratory Compaction Curves

### **Compaction Control**

In-place density tests were performed on Crushed Limestone (CA-6) that was placed for the parking lot for the depths and locations shown on Percent Compaction Report.

Based on the ASTM D 1557 (Modified) laboratory procedure, the percent compaction values met the specification requirement of 95 percent. The percent compaction data are included with this correspondence.

Also, in-place density tests were performed on fine sand that was placed for future area north of the parking lot. Based on the ASTM D 1557 (Modified) laboratory procedure, the percent compaction values ranged from 86.7 to 97.6 percent. The percent compaction data are included with this correspondence.



### **TESTING SERVICE CORPORATION**

#### *Local Offices:*

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8201 W. 183<sup>RD</sup> Street, Suite C, Tinley Park, IL 60477-9249  
708.429.2080 • Fax 708.429.2144

Conestoga-Rovers & Associates, Inc.  
L - 62, 873-2160 - June 6, 2005

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Also, included with this correspondence are copies of the laboratory compaction curves for the following materials.

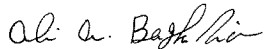
Soil Description	ASTM Procedure	Maximum Dry Density(PCF)	Optimum Water Content(%)
Dark brown SAND, trace gravel	D 1557	109.3	10.5
Brown fine SAND	D 1557	106.2	7.3

Please call if there are any questions.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,



Ali A. Bagherian, P.E.  
Gurnee Branch Manager

Vahan Hovakimian, E.I.

AAB:VH:km  
Enc. 5 Pages



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested

4/27/05

Job Number

62873

Page Number

1 of 1

Project: **COKE PROJECT**

PO 10-000627 WAUKEGAN, IL

Field Data								
Test #	Location	Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Compaction		
						Test (%)	Spec. (%)	Grade
	North Parking Lot:							
1	East End	0.0	137.9	4.1	A	97.9	95.0	P
2	Middle	0.0	137.4	4.4	A	97.5	95.0	P
3	West End	0.0	137.5	4.4	A	97.6	95.0	P
4	Area N of Parking Lot	2.0	93.5	6.9	B	88.0	95.0	F
5	Area N of Parking Lot	2.0	92.1	7.3	B	86.7	95.0	F
6	Area N of Parking Lot	2.0	92.4	7.2	B	87.0	95.0	F
Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation								
Comments								
Laboratory Compaction Curves								
LCC	Soil/Material Description			$\gamma$ dry	Moisture (%)	Procedure		
A	CA-6 Crushed LIMESTONE			140.9	5.8	MOD.		
B	Brown fine SAND			106.2	7.3	MOD.		
Field Test Procedure		Manufacturer/Model #		Serial #		Mode		
NUCLEAR		Troxler 3401		16029		Backscatter:		
						Direct:		Yes
Field Technician		Description of Codes Used						
J. Turner		STD = ASSHTO T99 MOD = ASTM D1557						
Reviewed By		P = MEETS PROJECT SPECIFICATION						
		R = RECOMMEND FOR ACCEPTANCE						
V. Hovakimian		F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS						



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested

5/4/05

Job Number

62873

Page Number

1 of 1

Project: **COKE PROJECT**

PO 10-000627 WAUKEGAN, IL

Field Data								
Test #	Location	Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Compaction		
						Test (%)	Spec. (%)	Grade
1	Refer to Map	3.0	103.7	7.1	C	94.9	95.0	R
2	" "	3.0	105.6	7.2	C	96.6	95.0	P
3	" "	3.0	106.7	7.3	C	97.6	95.0	P
4	" "	3.0	106.5	9.8	C	97.4	95.0	P
5	" "	3.0	106.4	7.3	C	97.3	95.0	P
6	" "	3.0	103.7	6.1	C	94.9	95.0	R
7	" "	3.0	106.3	7.4	C	97.3	95.0	P
8	" "	3.0	103.8	6.4	C	95.0	95.0	P
9								
10	" "	3.0	105.3	7.4	C	96.3	95.0	P
11	" "	2.0	105.9	5.8	C	96.9	95.0	P
12	" "	1.0	104.8	6.1	C	95.9	95.0	P
13	" "	2.0	105.8	6.4	C	96.8	95.0	P
14	" "	2.0	106.1	3.8	C	97.1	95.0	P
15	" "	3.0	105.3	4.6	C	96.3	95.0	P
16	" "	3.0	106.2	4.3	C	97.2	95.0	P
17	" "	3.0	106.6	4.4	C	97.5	95.0	P
18	" "	3.0	106.0	4.7	C	97.0	95.0	P
19	" "	3.0	105.1	5.6	C	96.1	95.0	P
20	" "	3.0	105.6	4.7	C	96.6	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
C	Dark brown SAND, trace gravel	109.3	10.5	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3401	18105	Backscatter:
			Direct: <b>Yes</b>

Field Technician	Description of Codes Used
J. Turner	STD = ASSHTO T99 MOD = ASTM D1557
Reviewed By	P = MEETS PROJECT SPECIFICATION
V. Hovakimian	R = RECOMMEND FOR ACCEPTANCE
	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**  
2055 Niagara Falls Boulevard Suite 3  
Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested
5/17/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**  
**PO 10-000627 WAUKEGAN, IL**

Field Data								
Test #	Location	Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Compaction		
						Test (%)	Spec. (%)	Grade
1	Refer to Map	2.0	100.8	5.3	B	94.9	95.0	F
2	" "	2.0	92.8	6.4	B	87.4	95.0	F
3	" "	2.0	94.7	6.7	B	89.2	95.0	F

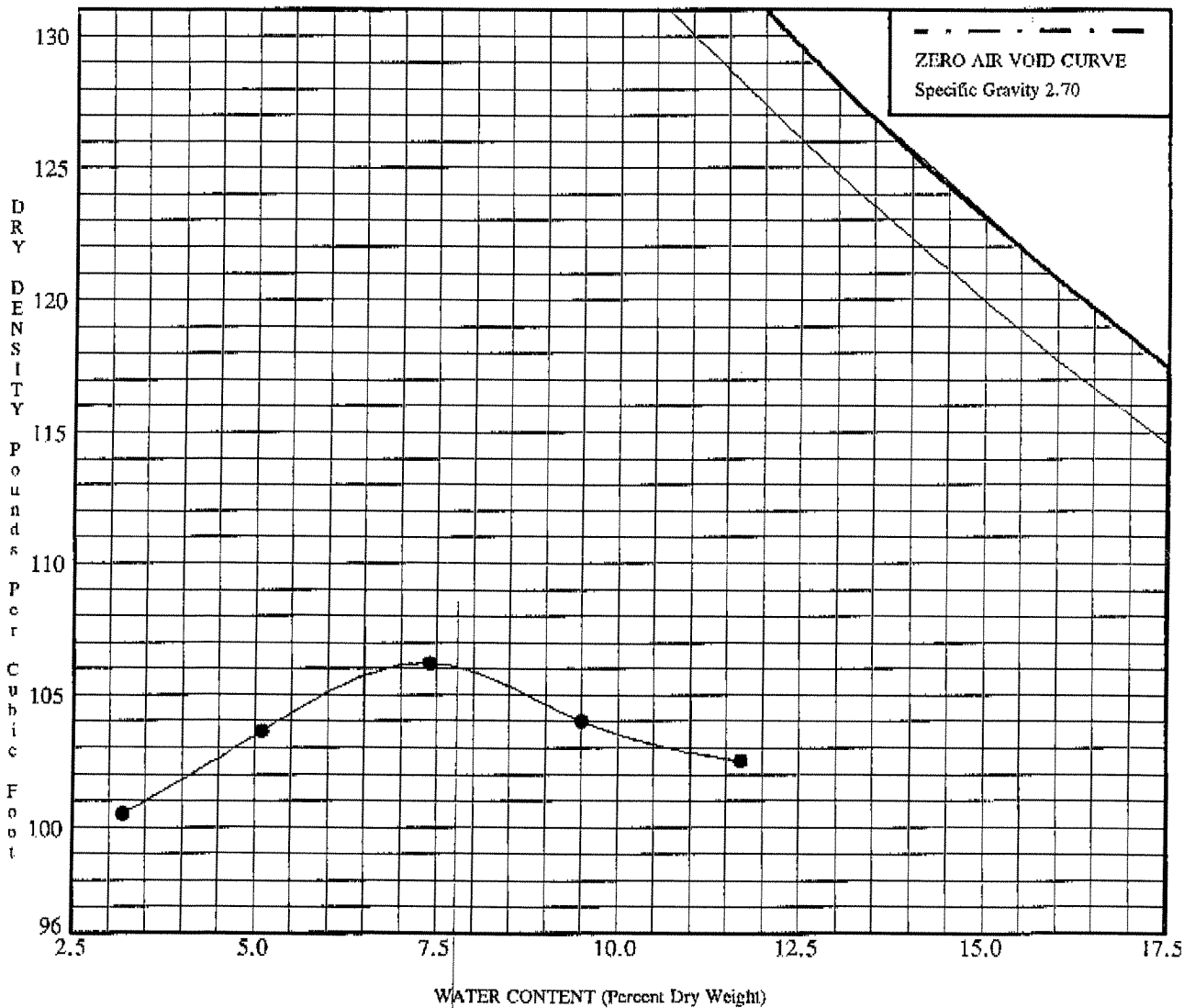
Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

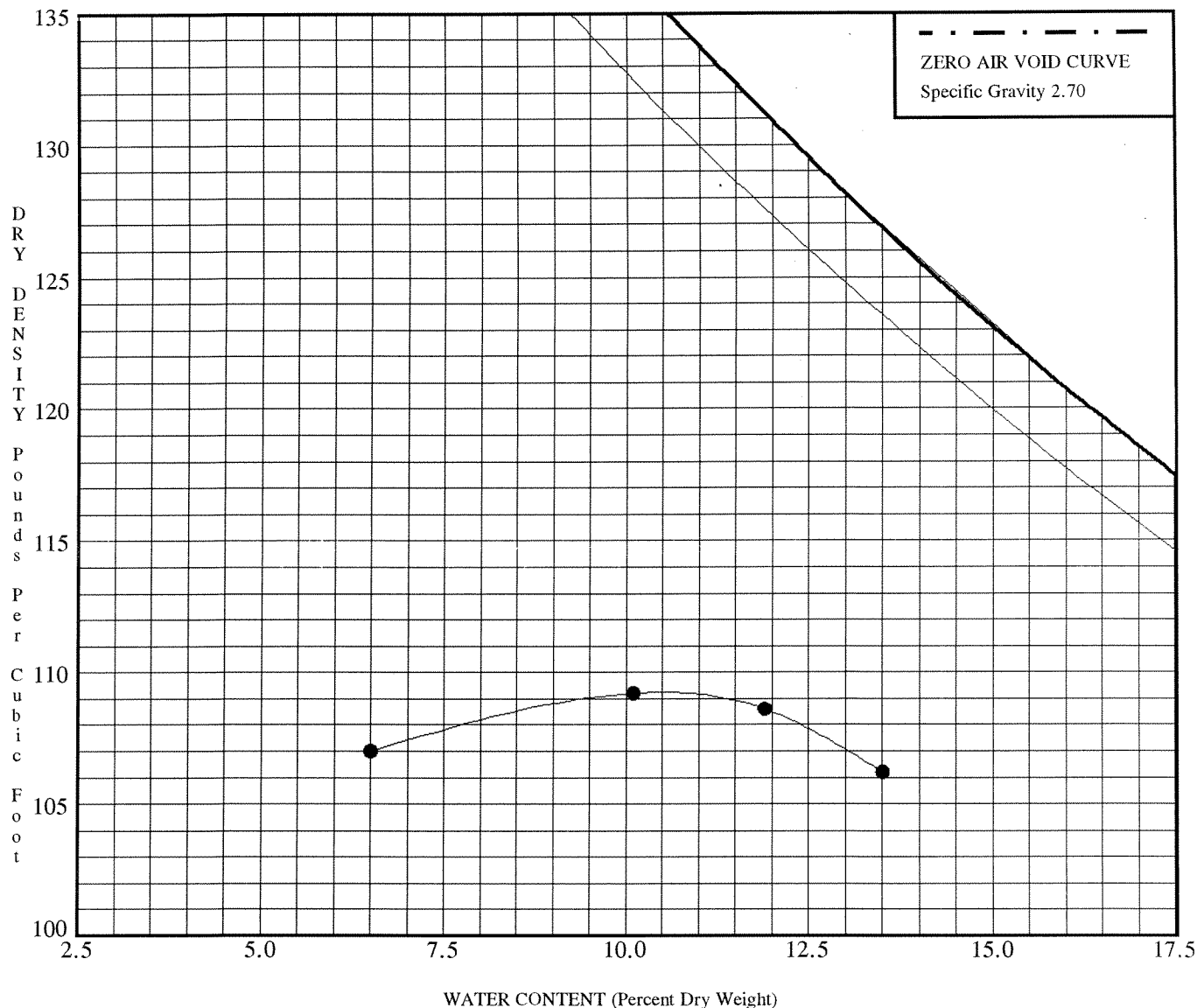
Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3401	12436	Backscatter: <input type="checkbox"/>
			Direct: <input checked="" type="checkbox"/>
Field Technician	Description of Codes Used		
J. Turner	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
Reviewed By	R = RECOMMEND FOR ACCEPTANCE		
V. Hovakimian	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		



SPECIMEN IDENTIFICATION		CLASSIFICATION	
		Brown Fine SAND (SP)	
MOISTURE/DENSITY RELATIONSHIP		NOTES :	
X	Standard ASTM D698/AASHTO T99	Date Completed: 5/23/05	
	Modified ASTM D1557/AASHTO T180		
Maximum Dry Density (PCF) <b>106.2</b>			
Optimum Water Content (%) <b>7.3</b>			
PROJECT	<b>Coke Project</b>	JOB NO.	<b>L-62,873-2160</b>
LOCATION	<b>Waukegan, Illinois</b>	DATE	

### MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation  
CAROL STREAM



<p align="center"><b>SPECIMEN IDENTIFICATION</b></p> <div style="border: 1px solid black; height: 100px; margin-top: 5px;"></div>	<p align="center"><b>CLASSIFICATION</b></p> <p>Dark brown SAND trace gravel (SP)</p> <div style="border: 1px solid black; height: 100px; margin-top: 5px;"></div>								
<p align="center"><b>MOISTURE/DENSITY RELATIONSHIP</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td>Standard ASTM D698/AASHTO T99</td> </tr> <tr> <td align="center"><b>X</b></td> <td>Modified ASTM D1557/AASHTO T180</td> </tr> <tr> <td colspan="2">Maximum Dry Density (PCF)      <b>109.3</b></td> </tr> <tr> <td colspan="2">Optimum Water Content (%)      <b>10.5</b></td> </tr> </table>		Standard ASTM D698/AASHTO T99	<b>X</b>	Modified ASTM D1557/AASHTO T180	Maximum Dry Density (PCF) <b>109.3</b>		Optimum Water Content (%) <b>10.5</b>		<p><b>NOTES :</b></p> <p>Date Completed: 4/30/05</p> <div style="border: 1px solid black; height: 100px; margin-top: 5px;"></div>
	Standard ASTM D698/AASHTO T99								
<b>X</b>	Modified ASTM D1557/AASHTO T180								
Maximum Dry Density (PCF) <b>109.3</b>									
Optimum Water Content (%) <b>10.5</b>									

<b>PROJECT</b>	<u>Coke Project</u>	<b>JOB NO.</b>	<u>L-62,873-2160</u>
<b>LOCATION</b>	<u>Waukegan, Illinois</u>	<b>DATE</b>	

### MOISTURE-DENSITY RELATIONSHIP

Testing Service Corporation  
CAROL STREAM



**TESTING SERVICE CORPORATION**

Rec'd CRA

JUL 08 2005

*Local Offices:*

457 E. Gundersen Drive, Carol Stream, IL 60188-2492  
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847.249.6040 • Fax 847.249.6042

203 Earl Road, Suite A, Shorewood, IL 60431-9446  
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8201 W. 183<sup>RD</sup> Street, Suite C, Tinley Park, IL 60477-9249  
708.429.2080 • Fax 708.429.2144

Gurnee, Illinois

July 5, 2005

Mr. Tim Leo  
Conestoga-Rovers & Associates, Inc.  
8615 West Bryn Mawr Avenue  
Chicago, Illinois 60631

Re: L-62, 873-2160  
Report 3  
Coke Project  
Waukegan, Illinois  
P O 10-000627

Dear Mr. Leo:

The following services have been provided in connection with the referenced project.

May 26, 2005	S. Page	Technician Services	7.00 hours*
May 31, 2005	S. Page	Technician Services	4.00 hours
June 1, 2005	S. Page	Technician Services	6.25 hours*
June 6, 2005	S. Page	Technician Services	4.00 hours*
June 7, 2005	S. Shah	Technician Services	4.00 hours*
June 10, 2005	S. Page	Technician Services	4.00 hours*
June 14, 2005	S. Page	Technician Services	5.50 hours*
June 29, 2005	V. Hovakimian	Report Preparation	1.95 hours

\*Use of Nuclear Density Equipment

**Compaction Control**

In-place density tests were performed on brown fine sand that was placed for future area north of the parking lot as shown on Percent Compaction Report.

Conestoga-Rovers & Associates, Inc.

L - 62, 873-2160 - July 5, 2005

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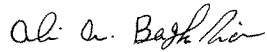
Based on the ASTM D 1557 (Modified) laboratory procedure, the percent compaction values ranged from 90.3 to 100 percent. The percent compaction data and location map are included with this correspondence.

Please call if there are any questions.

Respectfully submitted,

TESTING SERVICE CORPORATION

Prepared by,



Ali A. Bagherian, P.E.  
Gurnee Branch Manager



Vahan Hovakimian, E.I.

AAB:VH:lz

Enc. 17 Pages



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested
5/26/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**

PO 10-000627 WAUKEGAN, IL

Test #	Location	Field Data				Compaction		
		Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Test (%)	Spec. (%)	Grade
1	See enclosed Map "A"	1.5	108.5	6.4	B	100+	95.0	P
2	" " "	2.5	102.2	10.9	B	96.2	95.0	P
3	" " "	1.5	107.7	4.5	B	100+	95.0	P
4	See enclosed Map "B"	1.5	106.2	5.5	B	100+	95.0	P
5	" " "	2.5	95.9	11.3	B	90.3	95.0	F
6	" " "	1.5	102.5	5.2	B	96.5	95.0	P
7	" " "	1.5	100.4	3.9	B	94.5	95.0	R
8	" " "	1.5	101.6	6.1	B	95.7	95.0	P
9	" " "	1.5	101.6	6.0	B	95.7	95.0	P
10	" " "	1.5	100.6	4.1	B	94.7	95.0	R
11	" " "	1.5	98.8	4.6	B	93.0	95.0	F
12	" " "	1.5	96.8	5.4	B	91.1	95.0	F
13	" " "	1.5	100.4	5.9	B	94.5	95.0	R
14	" " "	1.5	96.0	4.7	B	90.4	95.0	F
15	" " "	1.5	100.9	5.7	B	95.0	95.0	P
16	" " "	1.5	100.6	6.2	B	94.7	95.0	R
17	" " "	1.5	99.2	5.1	B	93.4	95.0	F
18	" " "	1.5	98.0	5.7	B	92.3	95.0	F
19	" " "	1.5	102.5	10.1	B	96.5	95.0	P
20	" " "	1.5	101.7	5.7	B	95.8	95.0	P
21	" " "	1.5	102.9	7.4	B	96.9	95.0	P
22	" " "	1.5	99.6	8.7	B	93.8	95.0	F
23	" " "	1.5	106.3	4.1	B	100+	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter: <input type="checkbox"/>
			Direct: <input checked="" type="checkbox"/> Yes
Field Technician	Description of Codes Used		
S. Page	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
	R = RECOMMEND FOR ACCEPTANCE		
Reviewed By	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		
V. Hovakimian			

May 26/05  
1st lift of sand

Central  
1430x  
Site

+16

+17  
95.7

+18  
96.9

+19  
96.7

6/26/05

6-26-05

MM 26/05  
Comparison test

3rd lift of  
Sand

95%  
fox  
102% sand core

102%  
x  
x  
x  
x  
x

98%  
x  
x  
x

94.7  
+13

94.7  
+7

95.7%  
+6

95.6%  
+5

94.8  
+8

9%  
+9

94.5%  
+10

+12

92.4  
x  
x  
x

Station 11  
275  
Site 10

"B"



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: Conestoga-Rovers & Associates, Inc.

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304

Project: COKE PROJECT

PO 10-000627 WAUKEGAN, IL

## PERCENT COMPACTION REPORT

Date Tested
6/1/05
Job Number
62873
Page Number
1 of 1

Field Data								
Test #	Location	Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Compaction		
						Test (%)	Spec. (%)	Grade
1	See enclosed Map "A"	2.5	113.5	5.0	B	100+	95.0	P
2	" " "	2.5	112.0	3.1	B	100+	95.0	P
3	" " "	2.5	105.0	5.9	B	98.9	95.0	P
4	" " "	2.5	97.3	4.4	B	91.6	95.0	F
5	See enclosed Map "B"	2.5	101.8	6.8	B	95.9	95.0	P
6	" " "	2.5	113.1	9.1	B	100+	95.0	P
7	" " "	2.5	111.4	7.4	B	100+	95.0	P
8	" " "	2.5	112.3	11.1	B	100+	95.0	P
9	" " "	2.5	103.4	11.5	B	97.4	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

**Comments**

Note: Tests 1 through 4 with sand cone. Tests 5 through 9 with nuclear gauge.

Laboratory Compaction Curves				
LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter:
			Direct: Yes

Field Technician	Description of Codes Used
S. Page	STD = ASSHTO T99 MOD = ASTM D1557
Reviewed By	P = MEETS PROJECT SPECIFICATION
V. Hovakimian	R = RECOMMEND FOR ACCEPTANCE
	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS

11 Pl  
dow

Two pass  
100+90  
100+90  
2-1

100+90  
100+90  
2-1

+ 2 100+90

2-3' lift  
Sand core

June 1, 2005  
Need 2 or 3  
tests

$$27 \times 250 \times 500 \times 1 = 4029 \text{ cy}$$

6/1/05


+ #5

need 1 test  
per excavation

7104.7%

(f)  
 Kb  
 106.5%

10510


 #4  
 91%  
 SAND CONE

MW-7D  
MW-7S

Map B

6/11/05

need 2 tests

9740  
#49  
0-1150

SW-95  
NW-95

#3  
98.9%

Map B



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**  
2055 Niagara Falls Boulevard Suite 3  
Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested
6/6/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**

**PO 10-000627 WAUKEGAN, IL**

Field Data								
Test #	Location	Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Compaction		
						Test (%)	Spec. (%)	Grade
1	See enclosed Map "A"	1.0	118.0	7.9	B	100+	95.0	P
2	" " "	1.0	101.2	6.6	B	95.3	95.0	P
3	" " "	1.0	100.8	4.4	B	94.9	95.0	R
4	" " "	1.0	102.0	6.0	B	96.0	95.0	P
5	" " "	1.0	101.2	5.3	B	95.3	95.0	P
6	" " "	1.0	101.5	4.1	B	95.6	95.0	P
7	" " "	1.0	100.8	4.6	B	94.9	95.0	R
8	" " "	1.0	103.7	4.2	B	97.6	95.0	P
9	" " "	1.0	101.3	4.1	B	95.4	95.0	P
10	" " "	1.0	111.7	3.4	B	100+	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter:
			Direct: <b>Yes</b>
Field Technician	Description of Codes Used		
S. Page	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
	R = RECOMMEND FOR ACCEPTANCE		
Reviewed By	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		
V. Hovakimian			

6/6/05

June 6, 2005  
Compaction Test locations

PW 1

+A  
96%

+1  
100+%

+2  
95.3%

+3  
94.9%

+6  
95.5%

+5  
95.3%

+8  
97.6%

+7  
94.9%

+9  
95.4%

+10  
105.2%

OMC-MW-2

OMC-MW-1

"A"

"A"



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**  
**2055 Niagara Falls Boulevard Suite 3**  
**Niagara Falls, NY 14304**

## PERCENT COMPACTION REPORT

Date Tested
6/7/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**  
**PO 10-000627 WAUKEGAN, IL**

Test #	Location	Field Data				Compaction		
		Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Test (%)	Spec. (%)	Grade
1	Middle Third of Site, N End	1.0	102.2	5.3	B	96.2	95.0	P
2	Middle Third of Site, S End	1.0	100.7	9.9	B	94.8	95.0	R
3	South of Excess Road	2.0	99.5	9.8	B	93.7	95.0	R
4	North Third of Site	1.0	105.6	8.9	B	99.4	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter:
			Direct: <b>Yes</b>
Field Technician	Description of Codes Used		
S. Shah	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
	R = RECOMMEND FOR ACCEPTANCE		
	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		
Reviewed By			
V. Hovakimian			



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**  
**2055 Niagara Falls Boulevard Suite 3**  
**Niagara Falls, NY 14304**

## PERCENT COMPACTION REPORT

Date Tested
6/10/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**  
**PO 10-000627 WAUKEGAN, IL**

Test #	Location	Field Data		Moisture %	LCC	Compaction		
		Depth/ Elevation	$\gamma$ Dry			Test (%)	Spec. (%)	Grade
1	See enclosed Map "A"	1.0	103.5	7.4	B	97.5	95.0	P
2	" " "	1.0	100.7	13.1	B	94.8	95.0	R
3	" " "	1.0	100.8	6.7	B	94.9	95.0	R
4	" " "	1.0	101.1	6.2	B	95.2	95.0	P
5	" " "	1.0	102.8	6.7	B	96.8	95.0	P
6	" " "	1.0	101.4	8.4	B	95.5	95.0	P
7	" " "	1.0	111.7	6.2	B	100+	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

### Laboratory Compaction Curves

ECC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter: <input type="checkbox"/>
			Direct: <input checked="" type="checkbox"/> Yes
Field Technician	Description of Codes Used		
S. Page	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
	R = RECOMMEND FOR ACCEPTANCE		
	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		
Reviewed By			
V. Hovakimian			

6/10/05

June 10/09  
1-2' 11ft

⊕  $\frac{7}{10596}$

⊕  $\frac{A}{94.2}$

⊕  $\frac{3}{94.9}$

⊕  $\frac{2}{94.8}$

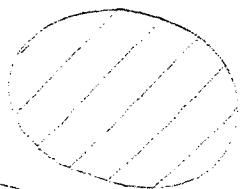
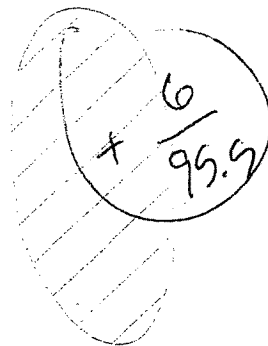
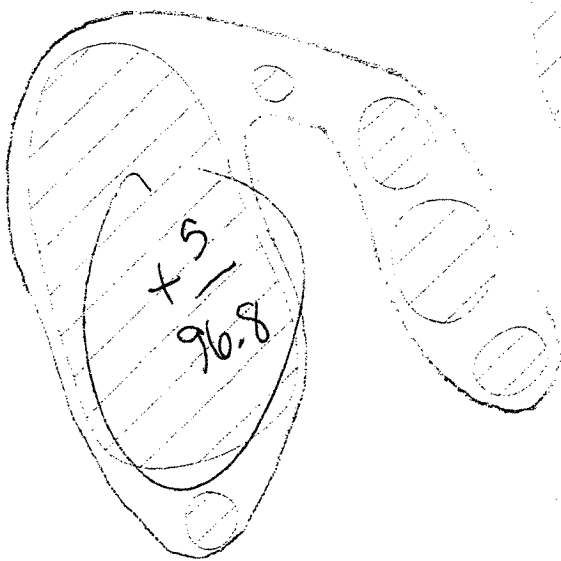
⊕  $\frac{1}{94.4}$

MW-9S  
MW-9D

11ft  
No P

6-10-05

June 10/05



NW-73  
NW-75

Map "A"



# TESTING SERVICE CORPORATION

457 EAST GUNDERSEN DR. · CAROL STREAM, ILLINOIS 60188-2492 · FAX: (630) 653-2726 · TEL: (630) 653-3920

Client: **Conestoga-Rovers & Associates, Inc.**

2055 Niagara Falls Boulevard Suite 3

Niagara Falls, NY 14304

## PERCENT COMPACTION REPORT

Date Tested
6/14/05
Job Number
62873
Page Number
1 of 1

Project: **COKE PROJECT**

PO 10-000627 WAUKEGAN, IL

Test #	Location	Field Data				Compaction		
		Depth/ Elevation	$\gamma$ Dry	Moisture %	LCC	Test (%)	Spec. (%)	Grade
1	See enclosed Map "A"	0.0	104.6	5.1	B	98.5	95.0	P
2	" " "	0.0	110.5	8.9	B	100+	95.0	P
3	" " "	0.0	104.8	2.4	B	98.7	95.0	P
4	" " "	0.0	94.0	8.7	B	88.5	95.0	F
5	" " "	0.0	106.5	3.5	B	100+	95.0	P
6	" " "	0.0	103.0	3.7	B	97.0	95.0	P
7	" " "	0.0	106.2	9.7	B	100+	95.0	P
8	" " "	0.0	103.3	7.2	B	97.3	95.0	P

Depth/Elevation = Depth in Feet below footing or final subgrade or expressed as elevation

### Comments

Note: Tests 1 through 5 with sand cone; Tests 6 through 8 with nuclear gauge.

### Laboratory Compaction Curves

LCC	Soil/Material Description	$\gamma$ dry	Moisture (%)	Procedure
B	Brown fine SAND	106.2	7.3	MOD.

Field Test Procedure	Manufacturer/Model #	Serial #	Mode
NUCLEAR	Troxler 3430	28916	Backscatter: <input type="checkbox"/>
			Direct: <input checked="" type="checkbox"/> Yes
Field Technician	Description of Codes Used		
S. Page	STD = ASSHTO T99 MOD = ASTM D1557		
	P = MEETS PROJECT SPECIFICATION		
	R = RECOMMEND FOR ACCEPTANCE		
Reviewed By			
V. Hovakimian	F = DOES NOT MEET PROJECT SPECIFICATION REQUIREMENTS		

6-14-05

#1 contaminated zone

June 14

3/973  
+ 976

2/1001  
+ 1049

MW-9S  
MW-9D

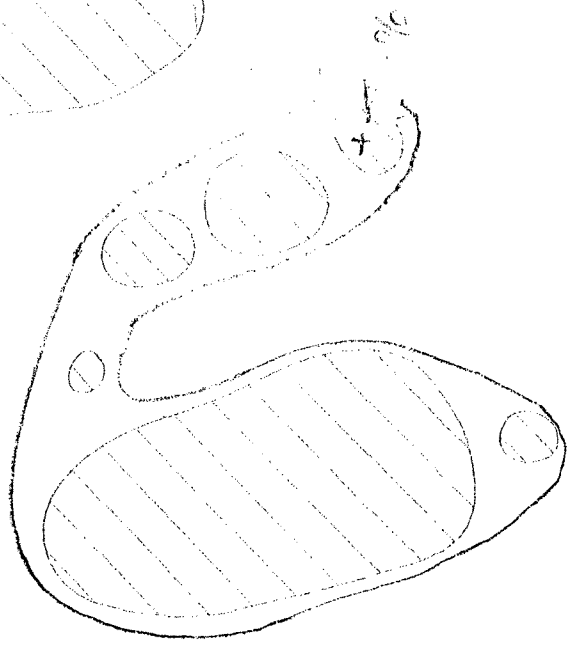
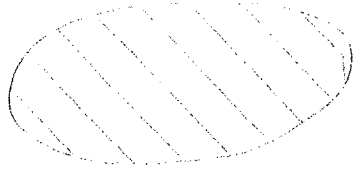
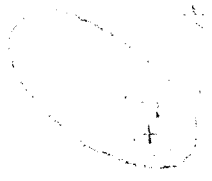
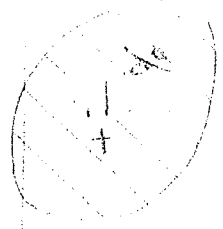
1/976  
+ 976

Dr  
down

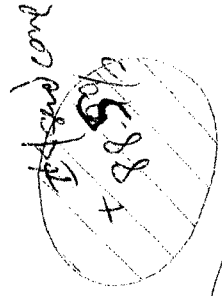
6/14/05

COMPACTION TEST RESULTS  
WAVEREEN CREEK SITE

JUNE 14, 2005



High sand cone  
+ 10070



SW-7A  
CL-MM  
VN-7C

Map

11

6-14-05

June 14

○ PW 1

End Curve #3

94.10

89.0

CMC-MW-2

○ CMC-MW-1

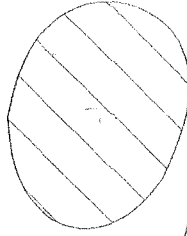
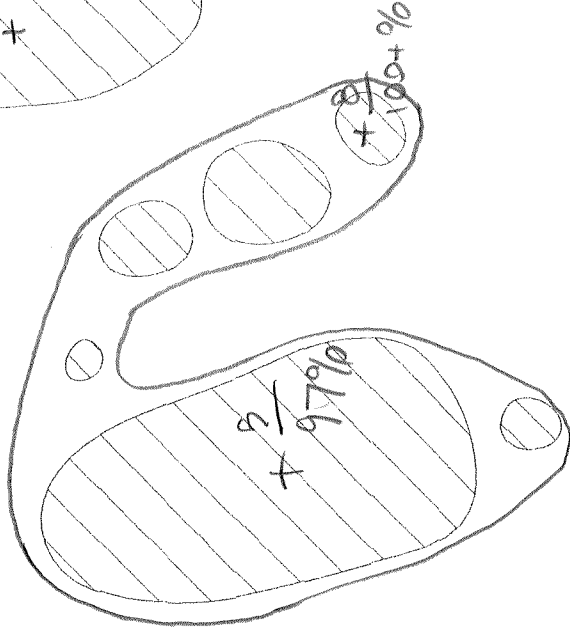
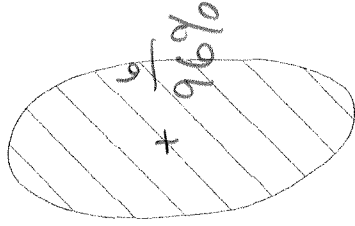
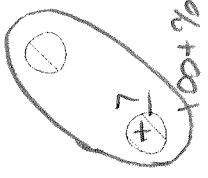
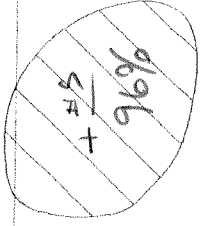
all  
map

COMPACTION TEST RESULTS  
WAUKESHA CORRE SITE

JUNE 1, 2005

JUNE 10, 2005

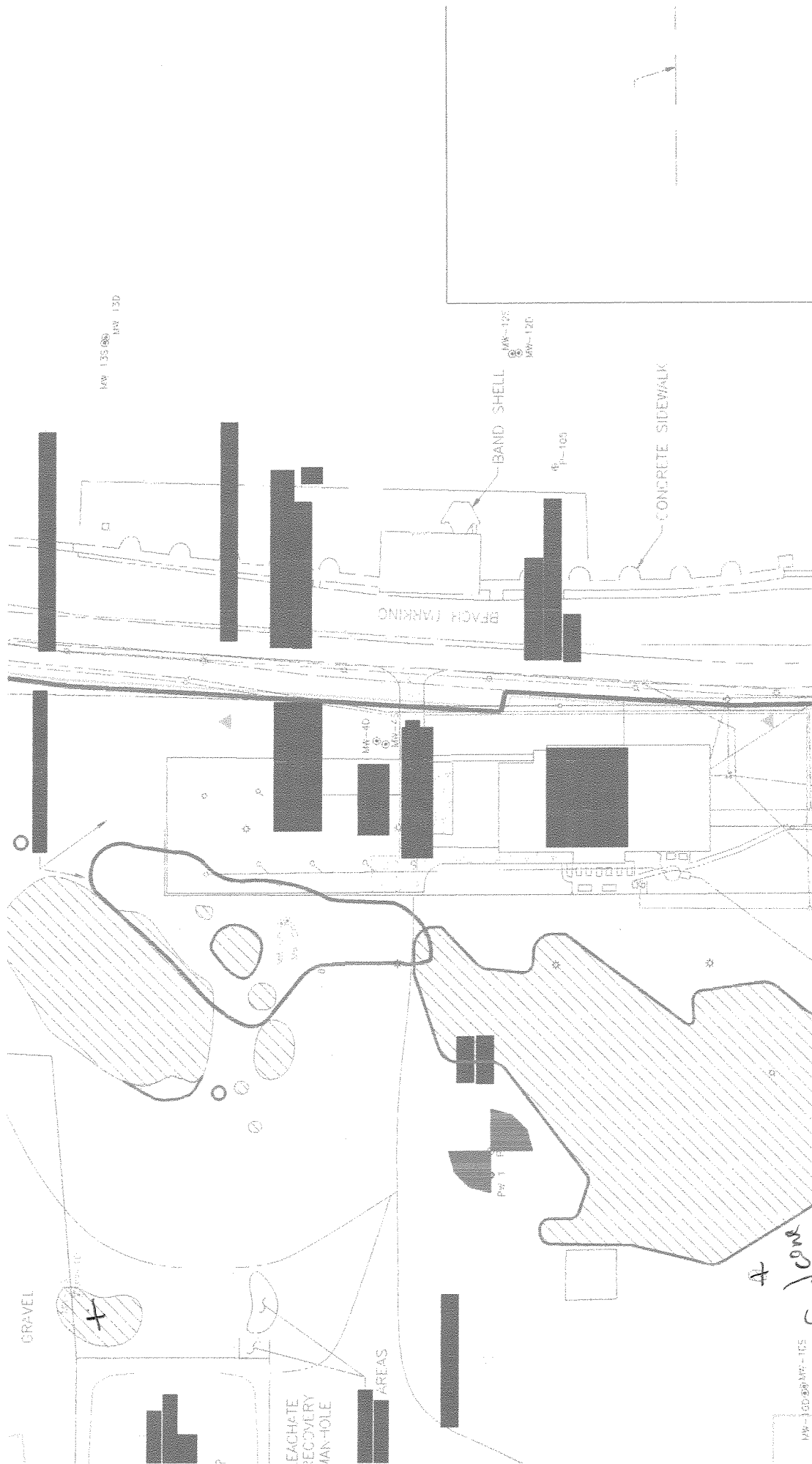
JUNE 14, 2005



MW-7D

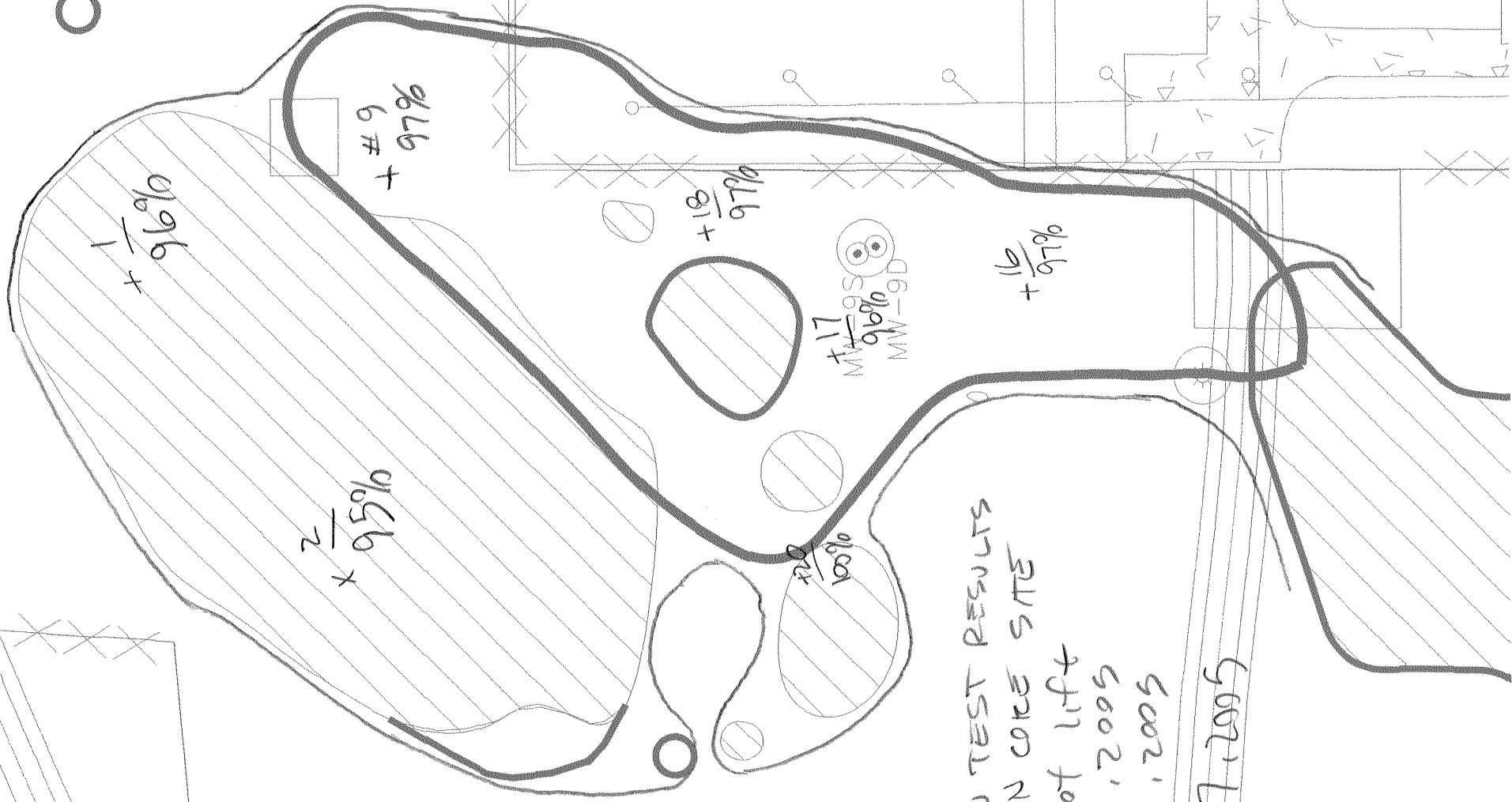
MW-7S





A  
 Spandone  
 #3  
 996  
 JUN 14

MR-100 MR-105



COMPACTION TEST RESULTS  
WAUKEGAN CORE SITE

0-1 Foot lift  
MAY 26, 2005  
JUNE 01, 2005

JUNE 07, 2005

⑦  
105%

4  
+ 95%

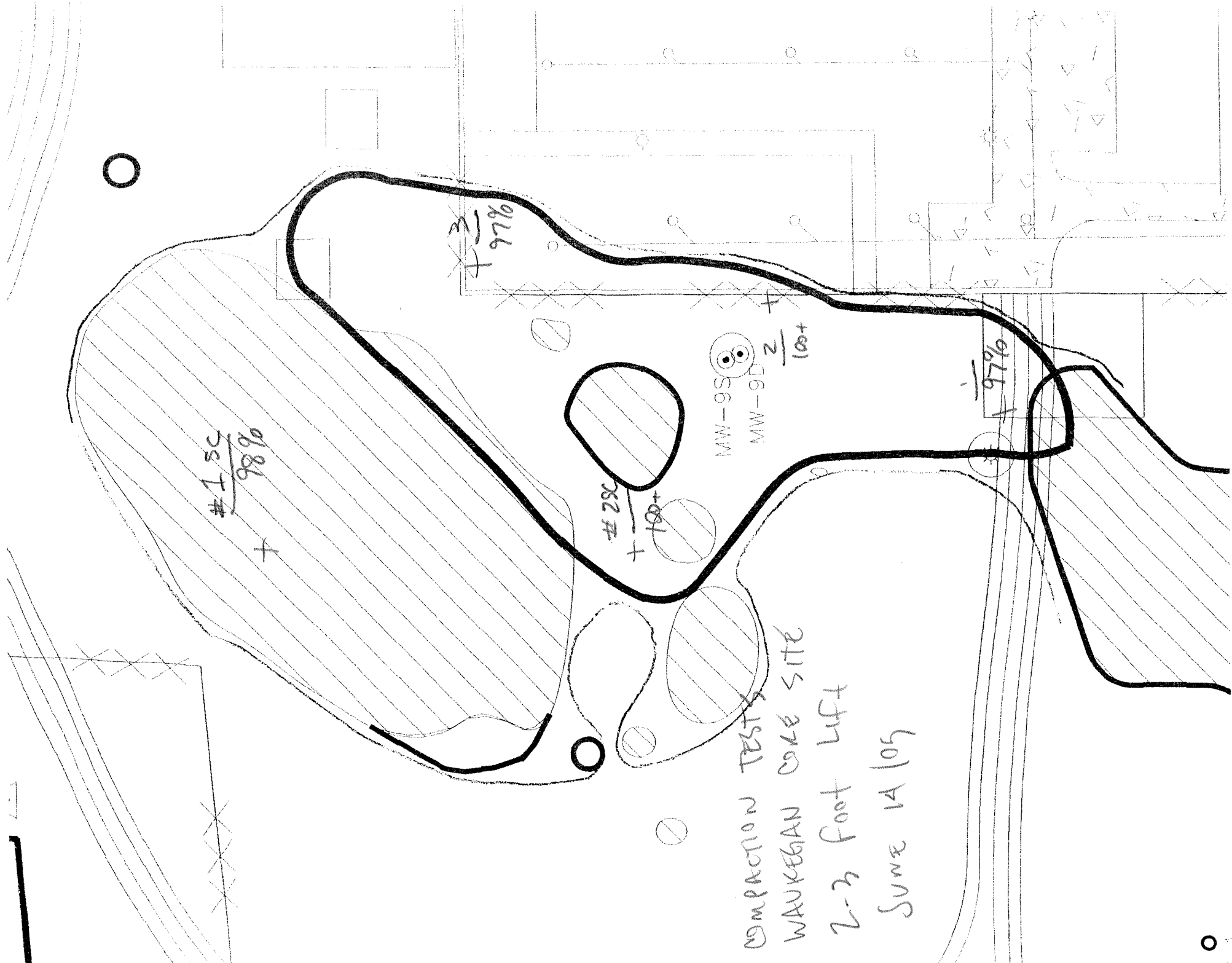
3  
+ 95%

2  
+ 95%

1  
+ 95%

MW-9S  
MW-9D

COMPACTION TEST RESULTS  
WAUKEGAN COKE SITE  
1-2 FOOT LIFT  
JUNE 10, 2005



31  
+ 97%

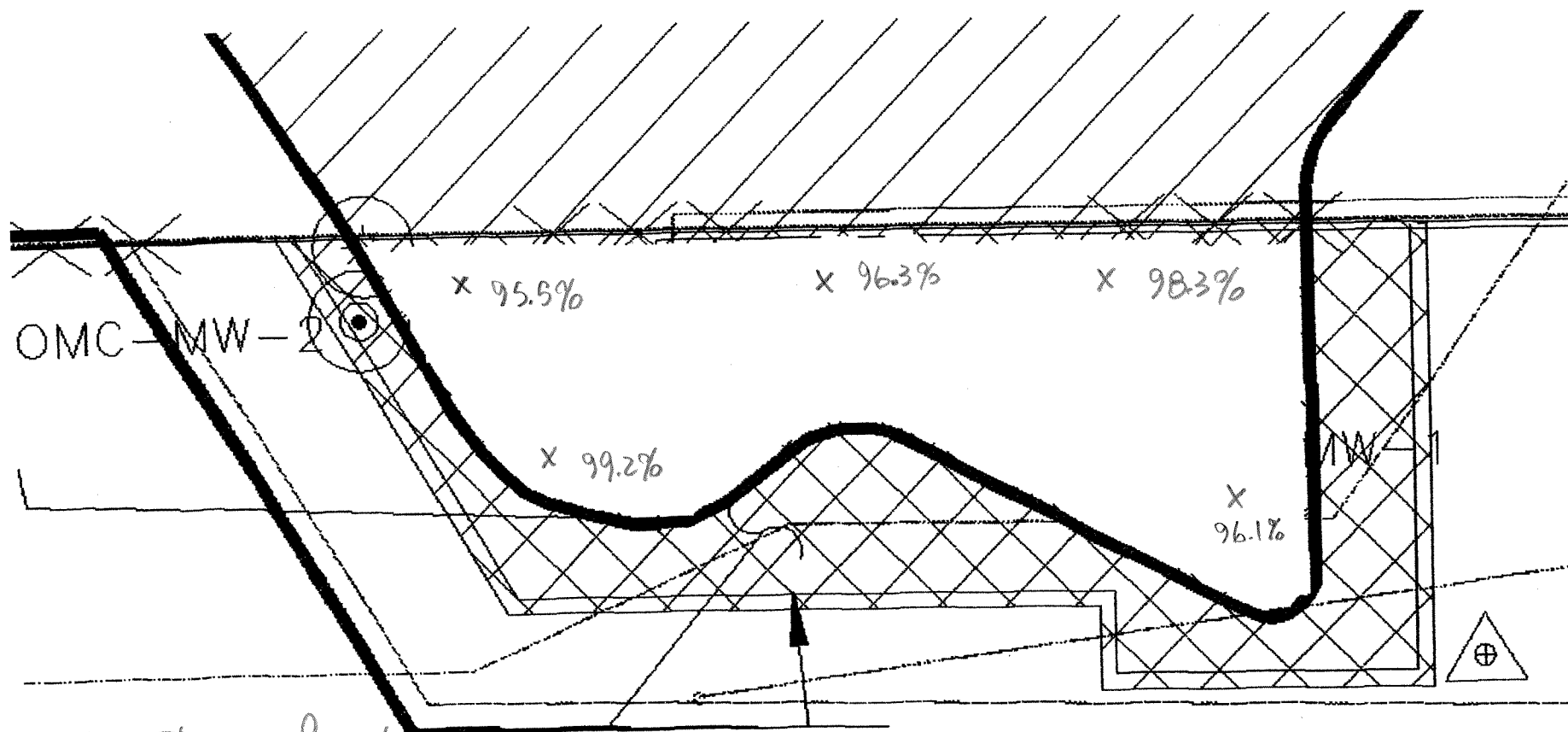
#1 SC  
98%

#2 SC  
+ 100%

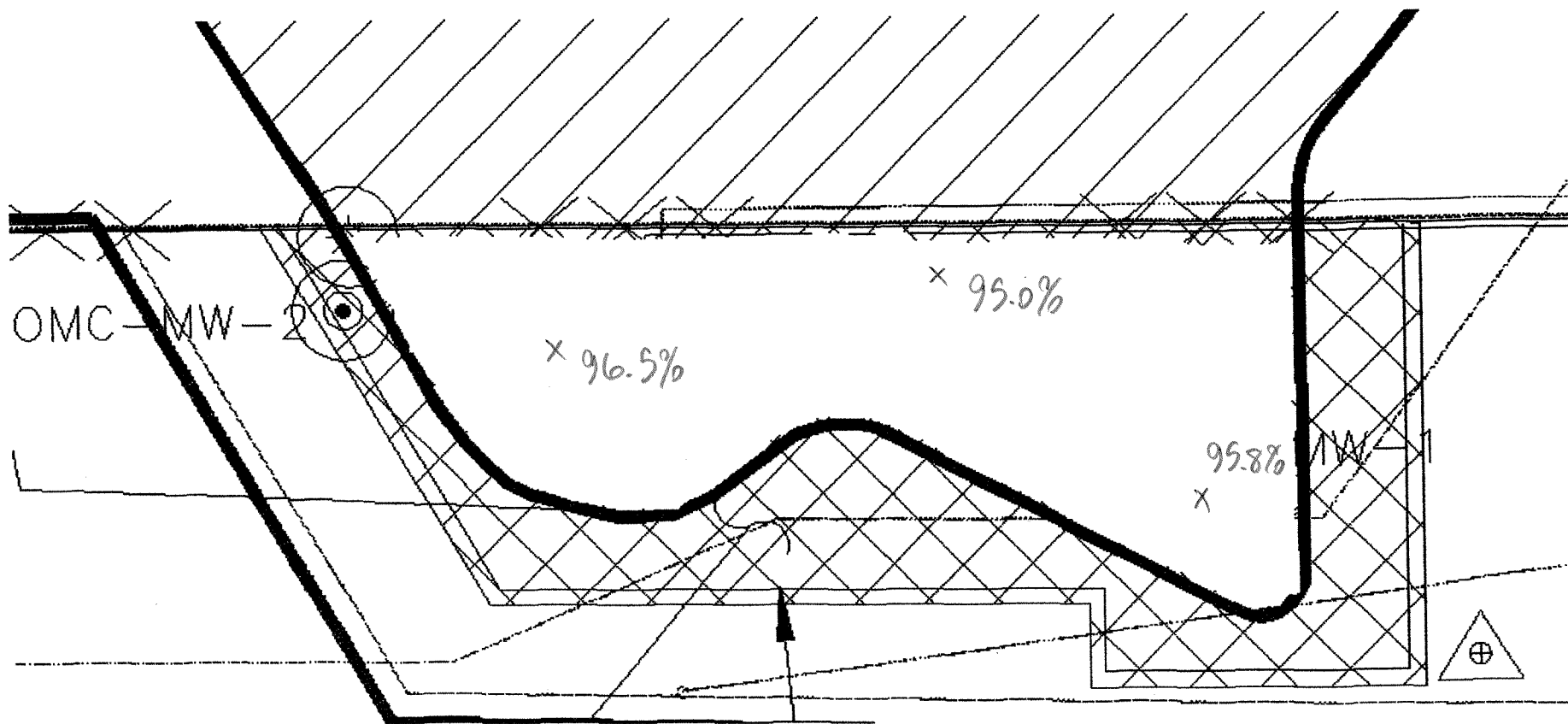
MW-9S  
MW-9D  
2/100+

1  
+ 97%

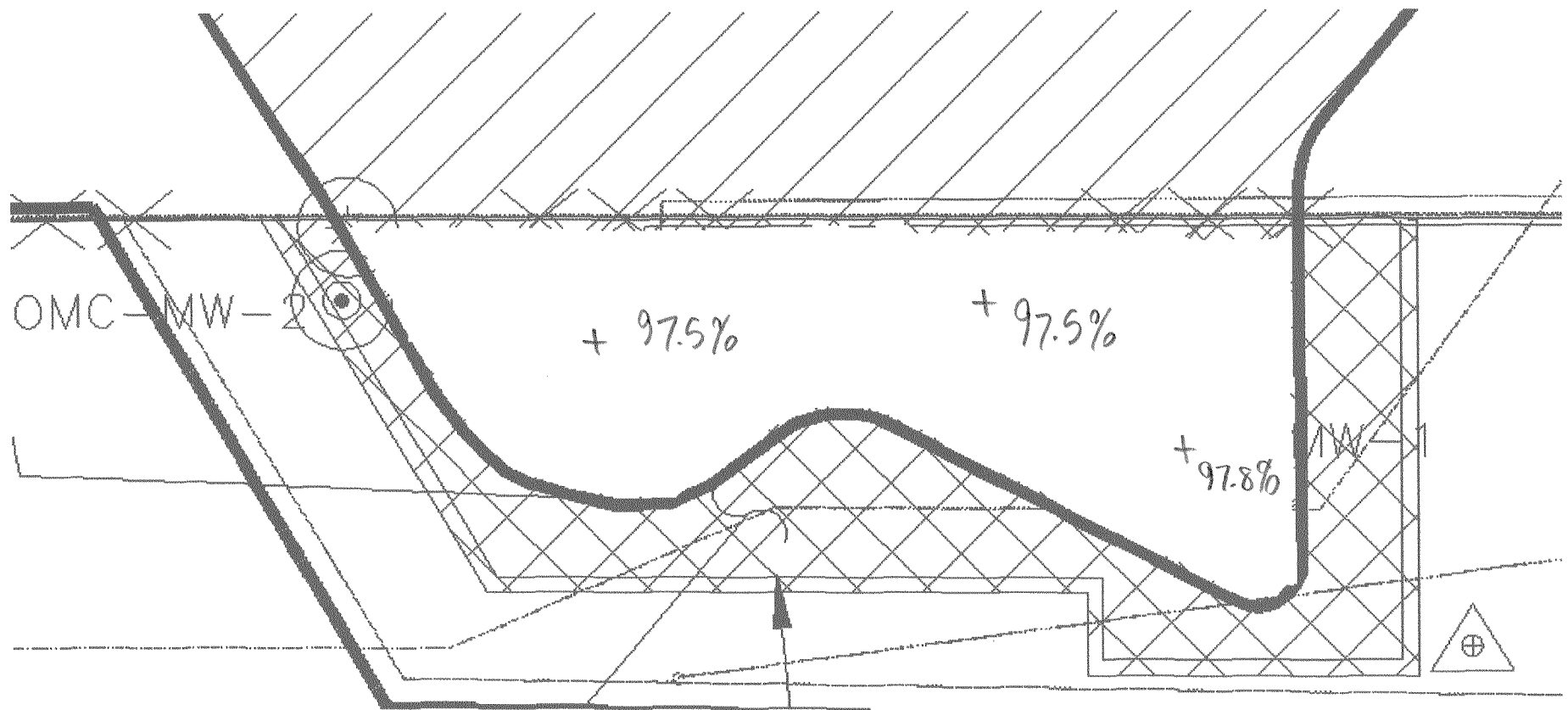
COMPACTION TESTS  
WAIKĒGAN CORE SITE  
2-3 foot Lift  
JUNE 14/05



Compaction Test Results  
OMC Parking lot Area  
0-1 ft lift  
April 1, 2005



COMPACTION TEST RESULTS  
OMC PARKING LOT AREA  
1-2 foot lift  
April 6, 2005



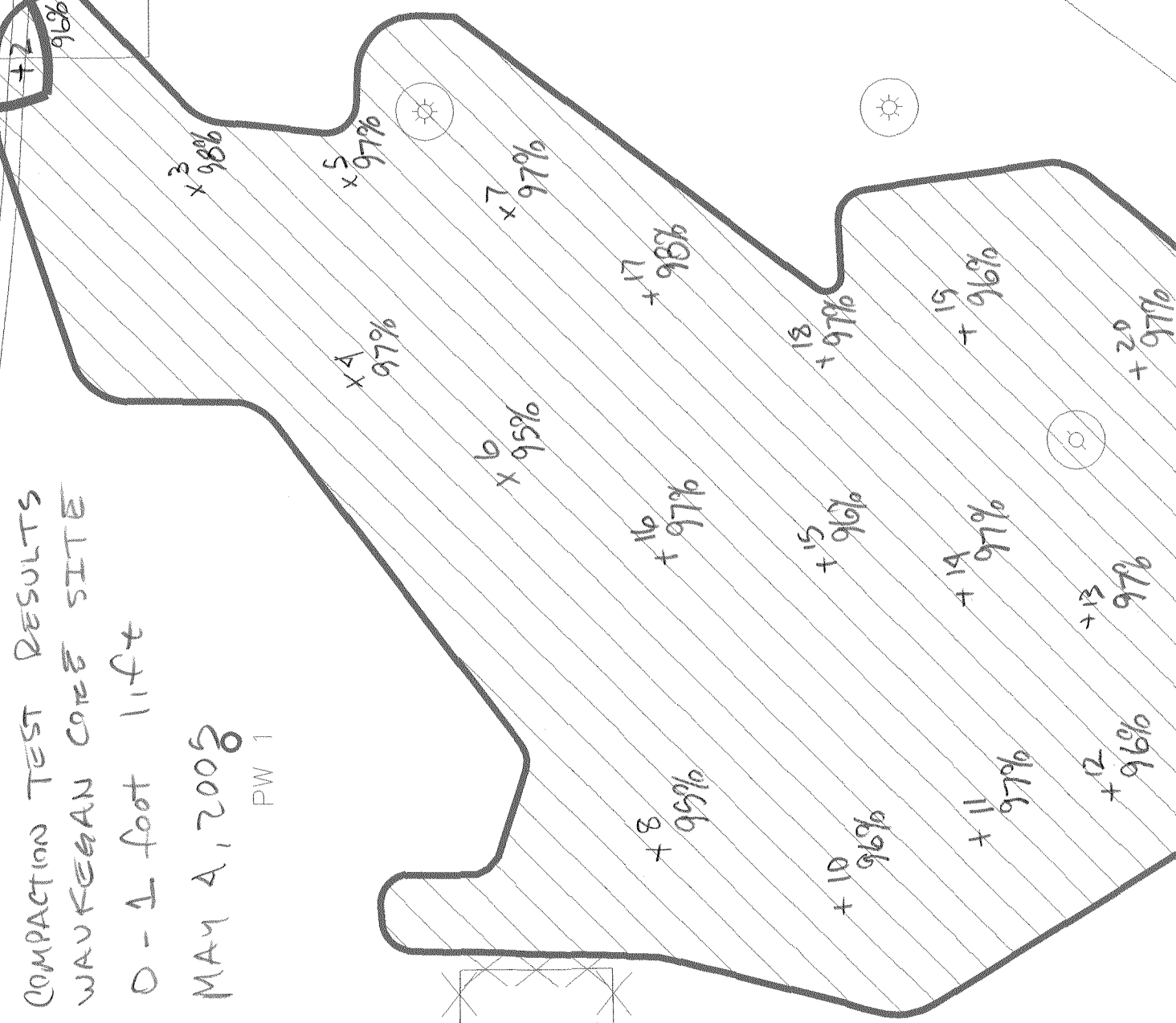
COMPACTION TEST RESULTS  
OME Parking Lot Area  
2'-3' foot lift  
April 27, 2009

COMPACTION TEST RESULTS  
WAUKESHA CORP SITE

0-1 foot lift

MAY 4, 2005

PW 1



OMC-MW-2

OMC-MW-1

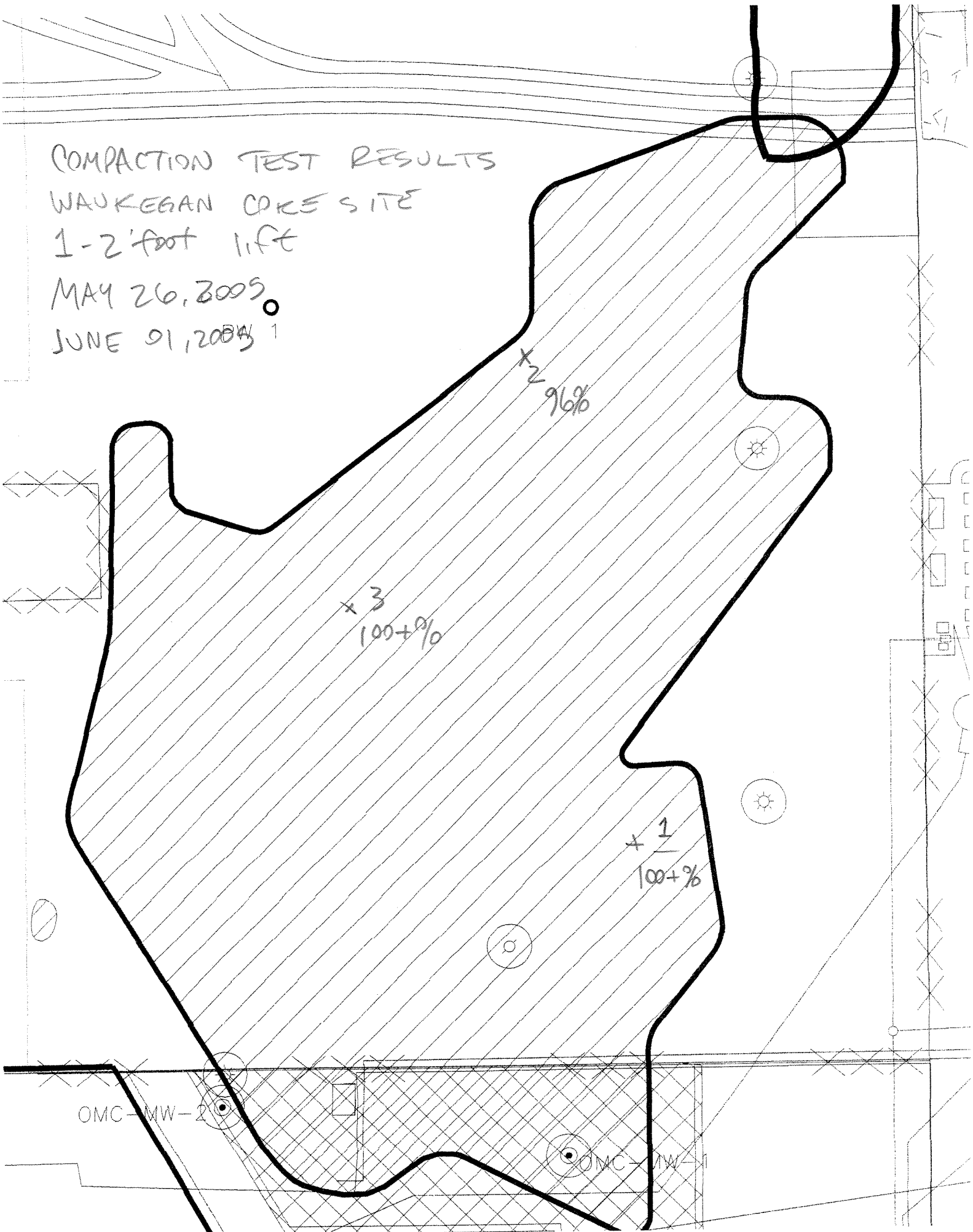
# COMPACTION TEST RESULTS

WAUKEGAN COKE SITE

1-2' foot lift

MAY 26, 2005

JUNE 01, 2005



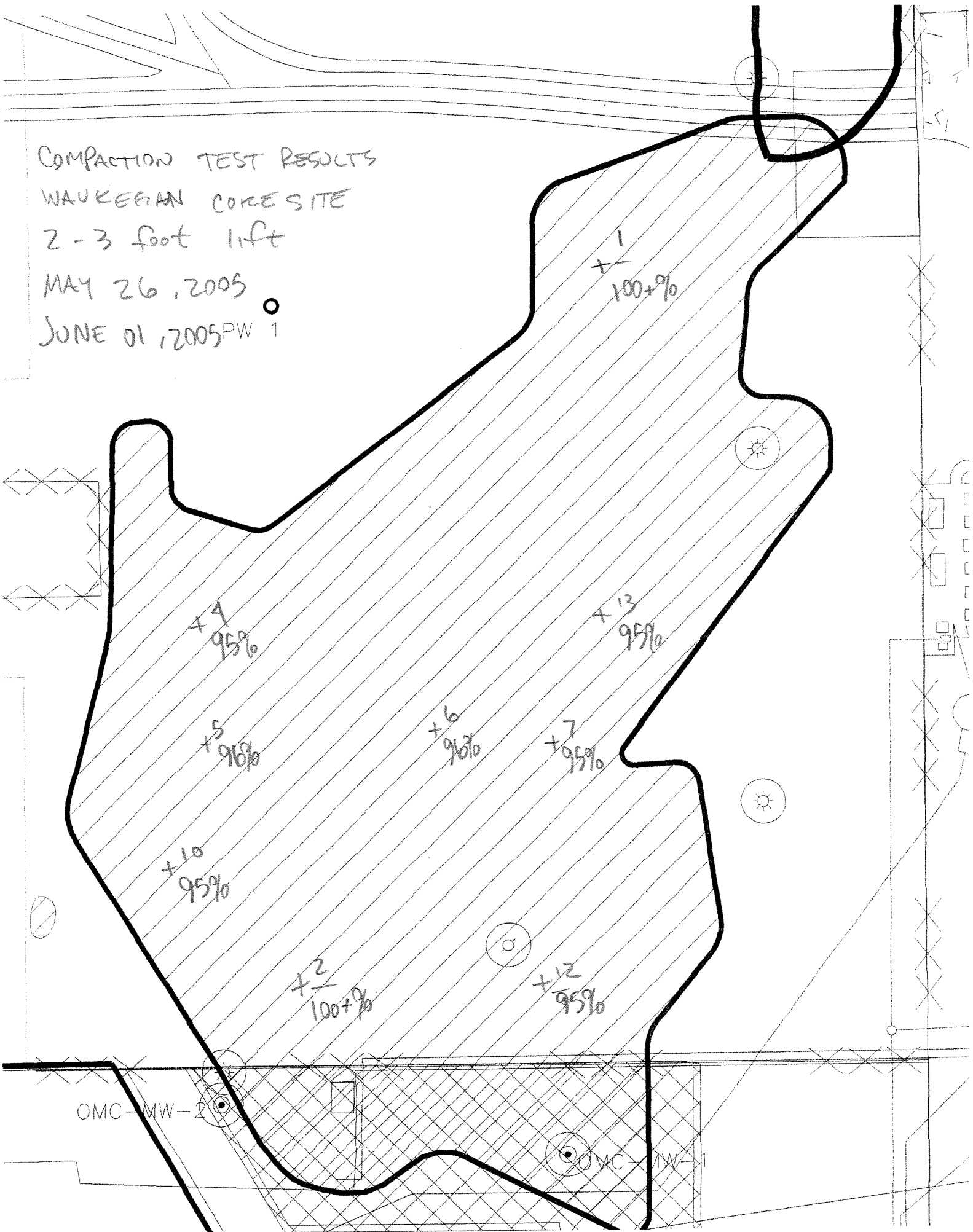
COMPACTION TEST RESULTS

WAUKEGAN CORE SITE

2-3 foot lift

MAY 26, 2005

JUNE 01, 2005 PW 1



3-A foot lift

JUNE 06, 2005 PW 1

